

Application No. 10/662,478
Amendment Dated February 20, 2009
Reply to Office Action dated November 20, 2008

REMARKS/ARGUMENTS:

No claims are currently amended. No new matter is added. Claims 1 – 10 are currently pending in the application, with claims 1 and 7 being independent.

Applicant has carefully considered the contents of the Office Action and respectfully requests reconsideration and reexamination of the subject application in view of the explanations noted below.

Rejections under 35 U.S.C. § 102(e)

Claims 1 – 4, 6, 7, 9 and 10 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,683,643 to Takayama et al. (the Takayama ‘643 patent). Applicant respectfully traverses this rejection, because the Takayama ‘643 patent clearly does not disclose, teach or render obvious the subject matter of independent claims 1 and 7.

Independent claim 1 recites, *inter alia*, automatically controlling the shutter driving unit to periodically drive the shutter.

Independent claim 7 recites, *inter alia*, automatically exposing CCDs periodically to light for a predetermined amount of time.

The Takayama ‘643 patent discloses a charge coupled device (CCD) camera that compensates for defective CCDs. The Takayama ‘643 patent describes the detection of white flaws after switch 15 (FIG. 1) is turned on (col. 11, line 52), when the temperature of CCD1 detected by the temperature sensor 13 arrives at or exceeds the prescribed reference temperature (col. 12, lines 17 – 19), immediately when a mode switch 16 is turned on (col. 12, lines 34 – 37) or after turning on mode switch 16 and pressing the shutter (col. 12, lines 34 – 39). The Takayama ‘643 patent also describes the detection of black flaws only when pressing the shutter (col. 12, lines 61 – 66). Therefore, the Takayama ‘643 patent only checks for defective pixels when *manually* triggered. Thus, the Takayama ‘643 patent does not disclose or suggest *automatically* controlling the shutter driving unit to *periodically* drive the shutter as recited in independent claim 1 or *automatically* exposing CCDs *periodically* to light for a predetermined amount of time as recited in independent claim 7.

Page 3 of the November 20, 2008 Office Action states that a conclusion can be drawn from the shutter speed being adjusted that the control circuit 8 periodically drives the shutter

to detect for pixel defects and cites lines 33 – 50 of column 16 of the Takayama '643 patent. However, lines 33 – 35 of column 16 state that “when the mode for detecting the defective pixel is selected by mode switch 16.” Thus, as noted above, the mode switch 16 must be *manually* moved to the defective pixel mode and then the shutter *manually* depressed to detect defective pixels. Therefore, the relied upon lines (33 – 50 of column 16) clearly teach away from the control circuit being automatically controlled to periodically drive the shutter, as recited in independent claims 1 and 7, such that the conclusion stated on page 3 of the November 20, 2008 is unsupported by the Takayama '643 patent.

Furthermore, lines 33 – 50 of column 16 of the Takayama '643 patent merely describes the control circuit 8 controlling the aperture and/or shutter speed when the mode switch 16 is set in a particular mode. As illustrated in the flowchart shown in FIG. 8, this action is *manually* triggered by photographing an image (step S4). Col. 17, lines 50 – 56. Thus, the only periodic control exercised by the control circuit 8 is when a photograph is periodically taken. Because the photographs are taken manually, the Takayama '643 patent does not disclose or suggest *automatically* controlling the shutter driving unit to *periodically* drive the shutter as recited in independent claim 1 or *automatically* exposing CCDs *periodically* to light for a predetermined amount of time as recited in independent claim 7.

Page 3 of the November 20, 2008 Office Action further cites lines 48 – 59 of column 23 for the position that the processing speed can be improved by making the number of defective pixels to be corrected small. However, this statement does not disclose or suggest *automatically* controlling the shutter driving unit to *periodically* drive the shutter as recited in independent claim 1 or *automatically* exposing CCDs *periodically* to light for a predetermined amount of time as recited in independent claim 7.

Page 3 of the November 20, 2008 Office Action also states that automatic detection of white flaws is carried out each time the power supply is turned on and cites to lines 9 – 15 and 47 – 51 of column 12 of the Takayama '643 patent. However, such action is not automatic in that the detection of white flaws is *triggered* by turning on the power supply, i.e., the detection of white flaws is responsive to the power supply being turned on and accordingly is not automatic. Furthermore, independent claims 1 and 7 recite that the driving of the shutter is automatically controlled to occur periodically. The portions of the Takayama

'643 patent cited in the Office Action state that the detection of white flaws occurs only when turning on the power supply, which is not an automatic and periodic occurrence.

Moreover, as discussed above, the Takayama '643 patent describes the detection of white flaws after switch 15 (FIG. 1) is turned on (col. 11, line 52), when the temperature of CCD1 detected by the temperature sensor 13 arrives at or exceeds the prescribed reference temperature (col. 12, lines 17 – 19), immediately when a mode switch 16 is turned on (col. 12, lines 34 – 37) or after turning on mode switch 16 and pressing the shutter (col. 12, lines 34 – 39). The Takayama '643 patent also describes the detection of black flaws only when pressing the shutter (col. 12, lines 61 – 66). Thus, each of these detections occurs only in response to an event such that the detection is triggered and not automatic. Moreover, as each of these detections is responsive they do not occur *automatically and periodically* as recited in independent claims 1 and 7.

Page 5 of the November 20, 2008 Office Action alleges that the Takayama '643 patent teaches automatically detecting white flaws each time the power is turned on. However, as discussed above, the detection of white flaws occurs when the power is turned on. Accordingly, the detection of white flaws does not occur automatically but is rather triggered by turning on the power supply. The automatic feature the Takayama '643 patent is referring to is not having to turn the mode switch 16 to the defective pixel detecting mode to detect white flaws.

Lacking an element recited in independent claims 1 and 7, the Takayama '643 patent does not anticipate independent claims 1 and 7 because a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). Therefore, the Takayama '643 patent does not anticipate or render obvious independent claims 1 and 7.

Claims 2 – 6 and 8 – 10, being dependent upon independent claims 1 and 7, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents, such as the control unit being adapted to control the shutter driving unit to operate the shutter at a low speed of claim 2; the control unit being adapted to control the shutter driving unit to operate

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the shutter at a lower speed in a predetermined interval based on a vertical period of the CCD data of claim 3; the control unit being adapted to control the shutter driving unit to alternately operated the shutter in odd fields and even fields of the CCDs at the low speed of claim 4; and amplifying the electric signals of the individual CCDs and comparing the amplified electric signals of the CCD to the CCD defect threshold level of claim 8. Therefore, dependent claims 2 – 6 and 8 – 10 are not anticipated or rendered obvious by the cited patents, particularly within the overall claimed combination.

Rejections under 35 U.S.C. § 103(a)

Claims 5 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Takayama '643 patent in view of Japanese Reference No. JP 402105683 to Hayashi (the Hayashi reference). Applicant respectfully traverses this rejection, because the Takayama '643 patent in view of the Hayashi reference clearly does not disclose, teach or render obvious the subject matter of independent claims 1 and 7.

The Hayashi reference is cited for disclosing an amplifier 4 that amplifies the output signal from the CCD sensor including the output of the defective photodiode at the timing of the defective photodiode with a gain as twice an ordinary gain. However, the Hayashi reference does not cure the deficiencies noted above with respect to independent claims 1 and 7, i.e., *automatically* controlling the shutter driving unit to *periodically* drive the shutter as recited in independent claim 1 or *automatically* exposing CCDs *periodically* to light for a predetermined amount of time as recited in independent claim 7.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Therefore, because the Takayama '643 patent in view of the Hayashi reference lacks features recited in independent claims 1 and 7, the Takayama '643 patent in view of the Hayashi reference does not anticipate or render obvious claims 1 and 7.

Claims 5 and 8, being dependent upon independent claims 1 and 7, respectively, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents, such as during the comparing operation, the control unit amplifies the electric signals of the individual CCDs read out of

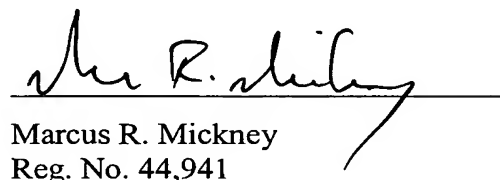
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the memory to a certain level and compares the amplified electric signals to the CCD defect threshold level, and during the comparing operation, the control unit compares the electric signals of the individual CCDs to the CCD defect threshold level, and during the replacing operation, the control unit arranges and stores in a second region of the memory at a descending order of signal values the location information relating to the CCDs having electric signals larger than the CCD defect threshold level of claim 5; and amplifying the electric signals of the individual CCDs, and comparing the amplified electric signals of the CCDs to the CCD defect threshold level of claim 8. Therefore, dependent claims 5 and 8 are not anticipated or rendered obvious by the cited patents, particularly within the overall claimed combination.

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In view of the foregoing comments, Applicants respectfully submit that claims 1 – 10 are in condition for allowance. Prompt and favorable action is solicited.

Respectfully Submitted,



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